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A NOTE ON THE SOMATIC CHROMOSOMES OF *URGINEA POLYANTHA* BLATTER

Hooker[5] under the genus *Urginea* Steinh (Liliaceae) reported *Urginea indica* Kunth, *U. wightiana* Hook. f., *U. coromandeliana* Hook. f., *U. congesta* Wt. and *U. polyphylla* Hook. f. from India. Subsequently *U. polyantha* Blatter[2] and *U. govindappae* Boraiah et Fathima[3] were added. Further systematic studies on the genus are in progress at Botanical Survey of India and at Maharashtra Association for the Cultivation of Science, Pune. Cytological work has been done on the genus previously by Battaglia[1], Boraiah *et al.*[3], Datta[4], Naik[7,8] and Raghavan[9]. The present study on the somatic chromosomes of *U. polyantha* is the first record of the genome in this species and provides karyotypic data for comparison with the other species of *Urginea* previously worked out.

MATERIAL AND METHODS

U. polyantha Blatt. was collected from its type locality, Panchgani plateau, in Satara district (Maharashtra) which seems to be the only locality known so far. The voucher specimen (Ansari, 105054) is deposited in the Circle herbarium (*BSI*) at Pune and a few bulbs of the species are also grown at the experimental garden of the Western Circle, Pune. Except for *U. congesta* and *U. polyphylla,* the rest of the species noted above bloom before their leaves appear. Among such species, *U. polyantha* Blatt. can be easily distinguished from others by its much denser raceme, shorter pedicels and shorter and broader perianth segments which are very stable characters of taxonomic importance and hence it is a good species.

The root tips from the potted plants of *U. polyantha* were pretreated with 0.002 molar 8-hydroxyquinoline solution for 3-3½ hours at 10-15°C, fixed in acetic-alcohol (1 : 3) for 24 hours and hydrolysed in the mixture of N HCl and 2% aceto-orcein (1 : 9) for 10 minutes at 60°C and then squashed in 1% aceto-orcein.

For the description of karyotypes the method followed by Levan *et al.*[6] has been adopted. For determining the type of chromosome the centromeric index $r = \frac{l}{s}$ (Table 1) was taken into account.

OBSERVATIONS

U. polyantha has twenty somatic metaphase chromosomes and the same along with its idiogram are shown in Figs. 1 & 2 respectively. It has the same number of chromosomes ($2n = 20$) as reported for *U. govindappae*[3], *U. indica*[9] and *U. coromandeliana*[4]. A natural intrapoloidy has also been reported for *U. coromandeliana* ($2n = 40$)[7]. In *U. polyantha* out of 10 paris, there are two pairs of long chromosomes, two pairs of medium size and six pairs of short chromosomes. The details of karyotypes are given in Table 1.

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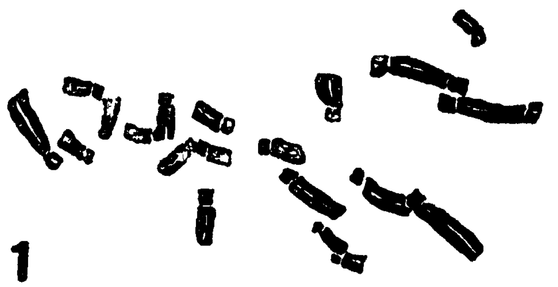
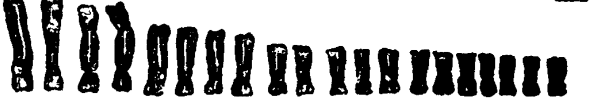
TABLE I

Chromosome pair	Constriction		Length in micron		Arm ratio	Satellite
	Primary	Secondary	Long arm (l)	Short arm (s)	$r=\frac{l}{s}$	
1.	S.T.	absent	5.41	1.42	3.80	Absent
2.	S.T.	present	3.13+1.99	1.14	4.50	"
3.	S.T.	absent	3.99	1.14	3.50	"
4.	S.T.	"	3.13	1.14	2.75	"
5.	S.T.	"	2.56	0.92	2.81	"
6.	S.T.	"	2.45	0.85	2.86	"
7.	S.T.	"	2.28	0.85	2.66	"
8.	S.M.	"	1.99	0.85	2.33	"
9.	S.M.	"	1.74	0.85	2.20	"
10.	S.M.	"	1.71	0.85	2.00	"


1


2

Figs. 1 & 2: 1. C.L.D. Showing metaphase chromosomes of *U. polyantha* and 2. its idiogram. Both figures × 1250.

It is evident that first seven pairs of chromosomes have got sub-terminal (S.T.) primary constriction and the rest have sub-median (S.M.) primary constriction, only the second pair has secondary constriction and none have satellite. The cytotaxonomic data thus shows that *U. polyantha* is a distinct species. The occurrence of this species elsewhere above 1000 m on the plateau along the Western ghats with a low to moderate rainfall is not ruled out.

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